DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY
HARVARD MEDICAL SCHOOL
25 SHATTUCK STREET
BOSTON 15, MASSACHUSETTS

September 4, 1958

Dear Josh:

I presume that you must be back from your trip. Congratulations for your new position at Stanford. I imagine that it must be a very good set-up to induce you to move, although as far as country-side is concerned its easy to see the advantages.

I have been in Boston for about two weeks but only recently I have started to work in the lab. Bernie suggested me a problem in the citrate-permease system which fits with my line of work.

Before I came here I had very interesting results with regard to the permease in E.coli. Unfortunately the data was obtained two weeks before my coming here and right now I am trying to clean it up for publication. I said unfortunately because I would have liked to know more about the whole thing before making statements. These results seem to tie with the work I did in Madison and they might explain many things. The story is that I have strong evidence that exists another transport system for β-galactosides. This system is present in non-induded cells and therefore it does not handle TMG. Upon induction the transport of β-galactoside increases two to three fold while TMG trnsport increases 25 fold.

The discovery was quite accidental. I was trying to synthesize labeled TMG and I decided to use galactose-C14 instead of S35 on account of the short life of the latter. To my surprise the labeled TMG did not behave according to Monod's experiments. After trying a number of strains and so on we came to the conclusion that the different labeling was responsible for the discrepancy, because a TMG labeled in the CH_3 (which I happened to synthesized previously) behave normally, i.e. like Monod says. We analyzed the galactose-labeled TMG and we discovered that it was a mixture of TMG and methyl-β-galactoside. After isolating the methyl-β-galactoside(BMG) and trying it with W2244 a strain devoid of β-galactosidase, it became clear that the uninduced cells accumulate a large amount of BMG but no appreciable amount of TMG. Furthermore it seems that the accumulation of BMG by these cells is inhibited only 50 % by NaN_3. I say it seems because I would like to repeat this experiment. The previous data can be considered as facts.

Right now I am running some kinetic studies, specificity of the system, constants, etc.

The most obvious implication of these experiments is that Monod's simple picture doesn't seem to be realistic. He implied all his conclusions from interactions with the uptake of TMG, but he never tried a β-galactoside to test it for accumulation. This was my major criticism to his results.

By the way, I have received an offer to work in a VA Hospital at Albany, N.Y. The position is associated with teaching at the Medical School of Albany. I am considering seriously to accept it, as a matter of fact I have practically decided to accept it and I am just working on a few details before my final decision.

I hope to have a chance to see you before I go back to Chile. I really appreciate your offer for economical support for my trip . It is most welcomed. Best regards to Esther and you, yours, Boris